

Topic taught: By using “displacement method” to investigate the volume of an irregular object

Subject/Area of learning: Primary 6 Mathematics - Volume (II)

Part I: Please use about 200 words in completing the table. Please include the key ideas, and give justifications on the comments you make/ the points you reflect on, please include suggestions for improvement on the areas.

Aspect of Performance	Reflection on Performance: state the point and give Justifications	Suggestions for Improvement
Are the Objectives of lesson written appropriately?	<p>In general, the objectives set up are clear and measurable. According to Bloom’s taxonomy of educational objectives (1956), there are six major categories in the cognitive domain of learning. Our group classifies the learning objectives into three levels: knowledge, analysis and application. Applying proper verbs such as “identify”, “distinguish” in learning objectives can help estimate students’ learning outcomes.</p>	
Are the strategies designed for conducting the lesson appropriate?	<p>In our micro teaching, we mainly apply two teaching strategies: cooperative learning and experiential learning.</p> <p>After separating students into different small groups, we have group task and group discussion for students to work together on a common task. Such as measuring objects with different tools and discussing about errors.</p> <p>Experiential learning asks students to learn through first-hand knowledge. Our micro teaching conducts two experiments for students to better understand the displacement method as well as the relationship between volume and cm cube.</p> <p>Besides, the teaching language overall is fluent, clear and</p>	<p>Kolb (1984) defines four stages of experiential learning, including concrete experience, reflective observation, abstract conceptualization and active experimentation. Although our micro teaching basically follows these four stages, we think the third stage could be improved. The stage of abstract conceptualization requires students to conceptualize the theory or knowledge they learn from this course. We can improve this part to let students to conclude the use of displacement method.</p>

	precise. Teachers can clearly demonstrate the processes of experiments and guide students to have deeper thinking about the experimental results.	
Are the teaching strategies/activities/homework or assessment exercises creative?	Through showing video, using Kahoot and conducting different experiments, our group considers that the teaching strategies and activities are creative. Students can enjoy more fun in math class and learn together through cooperative learning and experiential learning.	Although we think the assessment is creative, it may be a little difficult for students to do by themselves. It requires enough experimental tools for each group to finish the assessment. Therefore, the assessment may improve if teacher could provide unified experimental tools for students.

Part II (A) Reflection on Micro-Teaching Skills: Are the skills effective? What are the lessons learnt? These are the skills that makes the lesson more innovative

Please fill the relevant part of the table, and reflect on the components of the skills being selected (about 100-120 words)

<p>Skills for Reflection:</p> <p>Please note #1 is COMPULSORY, you may choose <u>another skill</u> in the options of 2, 3 and 4 to complete this reflection)</p>	<p>Reflection Components</p>	<p>Please circle: Please do a general rating on each of the skill components</p>	<p>Concise Reflective Comments: Please outline your reflection on each of the respective areas. You may focus on those skill domains that appear to have more concern on your micro-teaching and them on Part II (B) below.</p>
<p>1. Effective use of aids, resources and IT in teaching</p>	<p>a. Appropriately chosen teaching resources/aids/IT tools</p>	<p>Strongly Agree/ Agree/ Disagree (with reservation)</p>	<p>The teaching aids we used can provide chances for every students to participate.</p>
	<p>b. Innovative use of the teaching resources/aids/tools involved</p>	<p>Strongly Agree/ Agree/ Disagree (with reservation)</p>	<p>We have used Kahoot to encourage students to answer questions.</p>

	c. Demonstrate effective management in using the resources/aids/tools involved	Strongly Agree/ Agree / Disagree (with reservation)	The aids and resources we used are simple and students are easy to understand how the experiments proceed after demonstration.
	d. Can arouse interest/enhance motivation of students by the resources/aids/IT tools	Strongly Agree/ Agree / Disagree (with reservation)	The IT tool and the experient we chose to carry out can provide the result immediately and every students can take parts in it.
2. Stimulus Variation	a. Movements	Outstanding/ Good /Needs Attention	Our movements are appropriate to share we are making movement for purpose such as move from the place we conduct experiment to move to write equation on blackboard.
	b. Gestures	Outstanding/ Good / Needs Attention	We do not have so many gestures if we could have more, students would be more impressive.
	c. Change in speech pattern	Outstanding/ Good /Needs Attention	We can have more changes in speech pattern and avoid using monotonous voice to attract students.
	d. Change in interaction style	Outstanding/ Good / Needs Attention	We do not have enough interactions with students. And we should have more next time to makes the students attentive.

	e. Focusing	Outstanding/ Good /Needs Attention	We have say something to attract students' focus however we think that we can try to use more gestural focusing like underlining the important things that written on blackboard.
	f. Pausing	Outstanding/ Good /Needs Attention	We have suitable pausing to provide enough time for students to understand.
	g. Oral-Visual Switching	Outstanding/ Good /Needs Attention	We should avoid to give instructions to students by using oral expression for a long period of time
3. Questioning skills	a. Clarity of the questions being asked	Outstanding/ Good /Needs Attention	The questions we asked are clear and easy to understand.
	b. Ask questions that stimulates answers	Outstanding/ Good /Needs Attention	The questions we asked can stimulate students to link up different concepts.
	c. Use questions of different levels	Outstanding/ Good / Needs Attention	We can do better in this part as most of the questions we asked is quite straightforward.
	d. Appropriate feedback on student answers	Outstanding/ Good /Needs Attention	We will give positive feedback to students when they can give

			correct answers but we think that we can give a more systematic and well-organized feedback.
	e. Prompting techniques	Outstanding/ Good /Needs Attention	We have encouraged students to answer the questions and share their experimental result.
	f. Seeking further information techniques/ advanced answers	Outstanding/ Good /Needs Attention	We can ask students a directive question to seek further information if they cannot give the correct answer at first.
	g. Redirection techniques	Outstanding/ Good / Needs Attention	In our micro teaching we mainly focus on using non-verbal directives such as hand signals.
<p>4. Integrated skills</p> <p>Reminder: To ensure you can produce a deep analysis of skills, you may consider the level of difficulties in selecting the items for the reflection. A focused reflection is recommended in normal situations.</p> <p>Please check with your tutor on your selection focuses if you have any doubt when preparing your micro-teaching.</p>	a. Linkage between ‘old’ knowledge and new knowledge.	Outstanding/ Good /Needs Attention	Our teaching plan allows students to build new knowledge and skills on what students already know.
	b. Variety of lesson	Outstanding/ Good /Needs Attention	We build in more variety into our micro teaching such as Kahoot and experimental method and the range of activities seems wider than the traditional lessons. And this can raise students’ motivation to learn.

Part II (B) Based on Part II (A), do an overall evaluation on the teaching skills in about 400 words. The overall evaluation can focus on the lessons learnt in the planning and delivery of the plan, and suggestions for further improvement.

Reflection on the teaching skills based on the selected skills

We applied 4 different skills on the microteaching session. First of all it is the use of aids, resources and IT in teaching, we think we tried to apply it on different gadgets and platform, for example, we used 'Kahoot!' as a Q&A session to connect the lesson with the story that we demonstrate at the start of the lesson to conjure students' attention. There are both pros and cons for this measurement; schools need to provide gadgets for students to go online to Kahoot during lesson, since using personal gadgets during school time is mostly prohibited, moreover, distributing gadgets to students may lead to chaotic situations such as students go to surf other website and did not focus, therefore most of the schools may not be able to use Kahoot as a teaching tool. Kahoot got interesting music and graphics that can seek attention from students, while the application itself can state the answer and students' choice clearly, thus teacher can explain the question afterwards directly, it is suggested that Kahoot can be applied on different teaching purpose and subject. Video showing is also applied on our teaching, by showing an anime at the start of the lesson, we can draw the attention of the students while connect to the intended learning outcomes by applying Kahoot.

For stimulus variation we did not perform well. Movement and gesture is fine as we have to point the whiteboard time to time and our gestures is certainly fine and natural. On the other side, the performance of our intonation may not be so well because English was not our mother tongue. Questioning skills is not testified much in this microteaching. As our lesson was not planned around questioning the students, but still the questions we asked were clear however we have to work more on using different level of question and try to connect the questions together and conduct the lesson efficiently.

Last but not least, integrated skills we used 2 on it, prior knowledge and new knowledge is well-connected by us when we explain their relationship clearly, this may not be so efficient as providing full explanation maybe a bit sluggish to normal students, teachers should

review and make neat definition to students especially on mathematical concepts. The second integrated skills is 'Variety of lesson', we conducted the lesson through different media and aspects, we input an animation at the start of the microteaching and used kahoot to conclude the first activity and promote class participation at the same time. Followed by an experiment that we can let students to apply the displacement method, the key concept of the lesson. To sum up the lesson, worksheet was assigned to each group to apply their own displacement method to obtain a certain volume that we required. The variety of activity we applied on the lesson is quite a lot while it is quite innovative.

Evaluation the selection of strategies in planning the lesson

2 Teaching strategies were applied on our microteaching. First we picked 'Experiential Learning'. The reason behind this decision is because simply educating math concepts in an abstract way is not working in the 21st century, students will not manage it easily especially the ones are worse in mathematics, this will be a vicious circle for them eventually when they step into higher level education. By embedding experiential learning to this topic, students can get to learn through experience, work on real life experience other than numerous exercise or barely listening to teachers vague explanation. For the utmost performance, it is suggested that each group of students could have a set of props that could let each group of students have a chance to perform the experiment and get the first-hand experience. There is also a short-side of this setup, the discipline will be hard to control and it maybe slightly time consuming. Therefore not much school would actually apply this method and take the risk.

The second teaching strategy was cooperative teaching, we decided roles that students can be during the experiment. Students can act according to their role, such as acting out the experiment and recording the result. Students can learn through both of the role, and while working on different items, they can swap their role and learn from each other to achieve the aim of cooperative learning. Cooperative learning can also be sighted in the Kahoot event, students can discuss among each others and exchange their knowledge and opinion. Through activity, students can talk to each other proactively and enhance their communication skills while learn how to cooperate with each other while facing different obstacles.

To incorporate responses/feedback obtained from classmates

Most of the comments stated that our group make good use of IT aids such as funny cartoon which can arouse students' interest and it is also relate to our learning objectives. They also think that using Kahoot is a good IT tool for students to learn as it can draw the students' attention and the whole class can participate into the activity at the same time and the result can be shown on the screen immediately. It is good that students can know if they correct immediately and teacher can know how much the students learnt at the same time.

However, although the teachers can give a clear demonstration to show students how the experiment proceed, they seem not confident to speak up and give instructions. We should change our speech pattern such as showing emotions, putting emphasis on specific point, giving shape change in tone to draw students' attention and raise their interest.

Make suggestions for improvement such as highlights of certain skill and changes to be made in the lesson plan

I think the questioning skills can be enhanced in the microteaching. In the microteaching, we applied a few questioning skills only since we decided to use other skills. Instead in actual teaching measurements, questioning skills is pretty valuable and important to effective teaching. Secondly the speaking, tone, gestures can all be improved too, as our voices maybe not enthusiastic enough, the gestures maybe too mono for a teacher. For improving the lesson plan, the current one has already been a huge difference from our former one. Activity details such as what question is planned to ask, intended learning outcomes of each activity is also listed. Worksheet is also supplemented for students to learn through their experiment. Extremely detailed teaching procedure is also included. The only thing has to be amended is time for each teaching detail, this can enhance the teachers time management and keep all the things to be in shift.

Reflection on collaboration and coordination, and submit division of labour table

The collaboration and coordination of our group is marvellous. First of all, we decided the topic so early that we can prepare so soon

although not all of us are having a same major. We conjured up a lot of ideas when it comes to brainstorming especially on the filming part. Part of it is on how to make the video more cheesy and funny, unfortunately we did not chose the style on that side as microteaching should lock on the teaching performance part, as a whole, we had had a great time working together. Every teammates are willing to take up their part in the whole group project or film production. When it comes to report submission, mates with better subject knowledge will take up the lesson plan drafting part, while the others will cater the research part on different theory and skills. We are glad to work with each other and having this chance while fond to produce such a satisfaction!

References

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